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THE ARTISTS OF VESALIUS'S *FABRICA*

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The Artists of Vesalius's *Fabrica*

By TOM JONES



THE PURPOSE of this paper is to comment upon the illustrations in the *Fabrica* of Vesalius from the viewpoint of a medical illustrator, and to attempt to evaluate them as anatomic art and contributions to medical progress. It has always seemed to me that the illustrating of the *Fabrica* constituted one of the most significant and interesting events in all of medical history. As far as I have been able to learn, however, it is a story that has never been told. One searches in vain among the hundreds of books and papers written on Vesalius and the times he lived in for a satisfactory account of the making of this great series of pictures, which brings alive the text of the *Fabrica* and visualizes for the first time in recorded history the true structure of the human body. In all this literature certain more or less standardized material concerning the artists and their work is duly set forth and repeated with variations by each new author. Some of this is speculation and has been argued over for several hundred years. All of it is based upon a meager amount of authentic material and is at best dry stuff, having to do chiefly with disputed names and dates and throwing little light on a pioneer achievement of far greater consequence than is generally realized. For here was the genesis of anatomic illustration itself. These carefully wrought plates blazed the way for a profession that was destined to become a vital arm of medical education.

Had Vesalius written a preface of the kind we are used to now, and to which we turn for the author's acknowledgments, he might have told us something of the artists who labored with him and contributed so much to his *opus magnum*. But nowhere in its pages does he mention them. I have always held this against Vesalius. By not giving credit to his artist co-workers he evidenced a petulant and jealous side of his nature which is not an infrequent concomitant of genius. Some of his biographers suggest that this failure of Vesalius to acknowledge the

authorship of the plates was pique, since he is quoted as saying that the artists tormented him by their obstinacy until he felt more unfortunate than the bodies he dissected. It may be that he made his revenge complete by seeing to it that nowhere in the *Fabrica* did any signature or identifying mark appear on the plates. However, all of this was four hundred years ago and it is futile to deplore now the omissions either of the Father of Anatomy or of the scribes of his day. The majestic *Fabrica* still lives for all to see. Even today, measured by modern standards, it is an impressive volume. The powerful woodcuts combine perfectly with the beautifully set type of Oporinus, and four centuries have failed to dull its luster as an outstanding example of renaissance craftsmanship. One handles it reverently because here, in the oft-quoted words of Sir Wm. Osler, is "the greatest medical book ever written—from which modern medicine starts."

Few would probably take issue with the foregoing, but categorical statements invite challenge and I can imagine many students of anatomic art and medical history will be conscious at this point that no mention has been made of a giant figure which illumines the dark pre-Vesalian background. It is Leonardo Da Vinci, the first anatomic artist and the Father of Medical Illustration. Actually, the pioneer work of Leonardo preceded the *Fabrica* by many years and was an accomplishment of such originality and magnitude that he is called by some writers the founder of physiological anatomy. McMurrich observes that "Leonardo was the first to create a new anatomy, but he created it for himself alone; Vesalius demonstrated a new anatomy to the world." Priority here is an academic question and can be left to the historians. One title more or less cannot affect the glory that surrounds one who was supreme in so many fields.

By 1510 Leonardo is said to have dissected thirty bodies and to have made nearly eight hundred anatomical drawings which for accuracy and beauty transcend anything that was done for many generations after him. They were intended for a great treatise on anatomy which he and his friend Marcantonio della Torre expected to publish. It was a project conceived on a grand scale and contemplated a graphic anatomy of man from birth to old age in many volumes. His studies of the action of muscles and body mechanics, etc., indicate the scope of his great plan, which he had to lay aside under pressure of other interests and which he was unable to complete before his death in 1519. His dissections and drawings were done in carefully guarded privacy, and after he died the many portfolios of priceless drawings and notes were virtually hidden away from the world in the possession of his pupil and executor Melzi. Aside from a few fragments they did not come to light again for over three hundred years. During this time they lay stored away and neglected in the Ambrosian library in Milan and finally in the

Royal Library at Windsor. It was only through publication by modern photoengraving processes in 1902 that their existence became generally known.

To what extent the makers of the *Fabrica* plates and Vesalius himself were influenced by Leonardo's work is another controversial question. It does not seem likely that this influence, if any, was much of a factor. Leonardo had been dead for 18 years when Vesalius came to Padua from Louvain, and the young artists who were later to join him had little opportunity to see the master's drawings which had long ago been carefully stored away. Certainly their work in the *Fabrica* is about



FIG. 1. Jan Stephan van Calcar

as individual as any anatomic art I know, and it is free from any trace of plagiarism.

The full identity of the artists responsible for the *Fabrica* plates is not established to this day. It was a huge project which meant doing many hundreds of sketches and drawings from dissections, to say nothing of the labor involved in the making of the final engravings. A group of skilled artists was known to be employed, most of whom are not mentioned by name in the accounts. Vesalius himself seems to have had considerable ability in drawing and probably made some of the sketches himself to demonstrate his ideas on how certain structures should be represented.

Modern historians agree that chief among this group of artists was Jan Stephan van Calcar (fig. 1), who seems to have been responsible for most of the finished illustrations. Unfortunately, not a great deal is

known of him, although he was a remarkable artist and apparently highly regarded by his contemporaries. His career paralleled to an odd degree that of Vesalius. They both were Flemings, and both came from the Duchy of Cleves. Both journeyed to Italy as young men; Calcar to become the brilliant pupil of Titian in Venice, Vesalius to teach anatomy in nearby Padua. So far as we know, they met for the first time in Venice when Vesalius visited Titian for the purpose of securing his collaboration on his projected book of human anatomy. It has been suggested that Vesalius had seen some of Leonardo's sketches and was so impressed that he was unwilling to have his own drawings made by anyone but a master. Titian may have considered seriously doing the drawings himself. He was nearing sixty but at the height of his powers (he painted up to the time of his death at the age of ninety-nine), and was much interested in anatomy. Indeed he may have begun the drawings and later turned the task over to Calcar whose style was so similar to the master's that for two hundred years the illustrations were attributed to Titian himself. Calcar's paintings were said to have been beautifully executed, and it is related by Sandrast that they were sometimes mistaken for the work of Raphael, Titian and other great painters of the Renaissance. Rubens is said to have owned until his death a Nativity from Calcar's brush which he greatly admired. Undoubtedly he was a draftsman of the first order and probably the most able artist, with the exception of Leonardo da Vinci, ever to apply his talents seriously to the field of anatomic illustration. Like Leonardo he studied the cadaver so thoroughly that he became an expert anatomist; some say as good as Vesalius.

Unlike Leonardo's, however, his work is known to us almost entirely through wood cut reproductions. The average layman unfamiliar with how pictures get into books cannot appreciate the significance of this. Our modern photoengraving processes are so highly developed and our printed illustrations so realistic and faithful to the original copy that we take them for granted and lose sight of the fact that up to about eighty years ago printed pictures were possible only from handmade engravings in metal or wood. This meant that the artist's original drawing was transferred or drawn upon the block in reverse and laboriously cut into the material by gravers or knives in such a manner that it could be inked and printed like type. Although handmade engravings and etchings later became a highly developed craft, in Calcar's day the only method of reproducing a drawing was by cutting it into a wood block. It would probably be clearer to say that the wood block was cut away from the image since the part which printed had to be spared and the spaces between the lines routed out so that they would not be inked when the roller passed over the plate. Obviously the printed result could only approximate the artist's original

which had been drawn in crayon, pen or brush on paper. The rigid limitations of the wood permitted the engraver only lines and relatively coarse dots as his technique for imitating the artist's copy. The technical skill shown in the engravings of the *Fabrica* is amazing. In spite of their stiffness and lack of detail they manage to be highly successful illustrations, and one can understand how they are regarded to this day as outstanding examples of wood engravings, apart from their interest as anatomic pictures. Nowhere does Vesalius identify these fine craftsmen or mention the important part they played in his enterprise. Some think that Calcar did his own engraving, but considering the amount of time required to cut one block it seems to me much more likely that several professional engravers were employed.

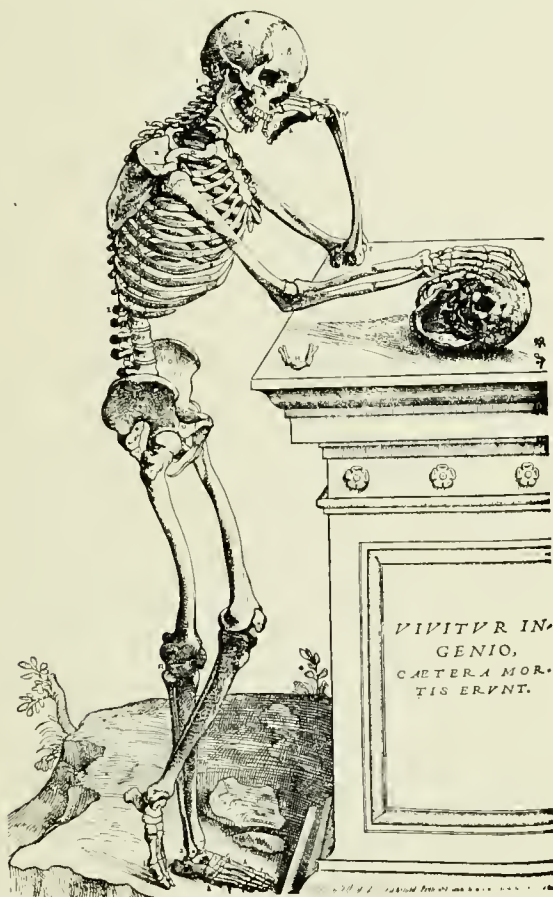
No attempt will be made here to discuss or critically analyze the *Fabrica* plates in detail. A few impressions come to me as I turn its hallowed pages, which may be pertinent to this paper and which may lead others to discover it and enjoy its riches. The second edition (1555) which is before me contains over 250 figures, not counting the famous frontispiece, portrait, initial letters and printer's mark. The larger plates are over thirteen inches high, and certain of them are remarkable for their beauty and accuracy. My own favorites are the three views of the skeleton shown in animated attitudes against backgrounds of charming landscapes. (A quaint custom of the old anatomic artists and one which I sometimes wish had not been abandoned.) These figures as well as certain smaller ones are the finest examples of the wood engraver's art to be found in medical literature. The bones generally are admirably illustrated and are superior to the soft tissue figures. This is easily understood, because the hard character of bone lends itself much better to the inherent limitations of the wood cut technique. Then too, since preserving fluids were not yet invented, bones made better subjects because artists and anatomists were not handicapped by the need for speed, as they were in studying the soft parts which decomposed rapidly as they worked. It was only the stout-hearted who could endure the atmosphere of the dissecting room.

Others have described the *Fabrica* in such detail that more need not be said here. I would only add that examining it is an interesting educational experience and should be required of all students of medicine and medical illustration for the good of their souls. The first edition is rare and can only be seen in such collections as the Army Medical Library. Later editions and reprintings are available in most of the better medical college libraries.

If the complete story of the illustrating of the *Fabrica* is ever told it will make good reading. Some future student of the renaissance may visualize for us how, against a background of one of the greatest periods in history when art, literature and science were being reborn,

a small group of earnest men made possible under difficulties a great book which was to advance human welfare beyond calculation.

I have tried in this paper to set down some thoughts and observations on the artists of the *Fabrica* from the standpoint of the medical illustrator. I hope that what has been said is also a tribute to them. Too many of the biographers of Vesalius have left the impression, perhaps unwittingly, that the work of these men was but an expression of the great anatomist's own genius and an incident in the Vesalian epic. It was far more. Rowlandson, speaking of the *Fabrica*, says, "The dissections and the plates are the book." We should remember that Calcar and his brother artists labored long and well to make these plates. In doing so they contributed in their own right something of great value to mankind—something worthy of our eternal gratitude.



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